UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF

DEC 0 9 2011

Andrew Stewart
Chief
Permits and Stationary Source Modeling Section
Bureau of Air Management
Wisconsin Department of Natural Resources
P.O. Box 7921
Madison, Wisconsin 53707-7921

Dear Mr. Stewart,

On November 15, 2011, the U.S. Environmental Protection Agency received notification of the Wisconsin Department of Natural Resource's (WDNR) intent to issue a Prevention of Significant Deterioration (PSD) construction permit for Wisconsin DOA / UW Madison – Charter St. (permit number 11-SDD-099). The existing facility is a major stationary source under PSD, and the University of Wisconsin – Madison originally proposed a project in 2010 to add a biomass fired boiler and two natural gas fired boilers. The current proposal is a revision of the 2010 project in which the biomass boiler will not be built, and the final project will consist of four natural gas fired boilers totaling 1240 mmbtu/hr. The proposed project is a major modification for emissions of greenhouse gases (GHG), nitrogen oxide (NOx), sulfur dioxide (SO_2), carbon monoxide (CO), and particulate matter (PM), including PM less than 10 microns in size (PM_{10}) and less than 2.5 microns in size ($PM_{2.5}$).

In order to ensure that the project meets Federal Clean Air Act requirements, that the permit will provide necessary information so that the basis for the permit decision is transparent and readily accessible to the public, and that the permit record provides adequate support for the decision, EPA has the following comments.

1. Page 21 of the draft permit's Preliminary Determination document has a discussion of the National Ambient Air Quality Standard (NAAQS) analysis and uses an emission rate of 42.28 pounds per hour (lb/hr) for NOx, whereas the NOx emission rate in the draft permit is 45 lb/hr. Please explain the discrepancy of the higher emission rate allowed in the permit and why it does not match the data used in the modeling analysis. Or, if this was an error, please conduct another analysis using the 45 lb/hr emission rate to ensure that the NO_2 NAAQS will not be violated, or change the permitted NOx emission rate to be equal to or less than 42.28 lb/hr.

2. Page 27 of the draft permit's Preliminary Determination document has a discussion of the $PM_{2.5}$-24 hour modeling analysis. Your modeling analysis shows a potential exceedance of the $PM_{2.5}$-24 hour NAAQS with a value of 116.9% of the NAAQS. Please explain how the permit conditions will be modified to prevent this predicted exceedance, or whether other

information in your records shows that the source will not cause or contribute to a violation of the 24-hour $PM_{2.5}$ NAAQS.

3. The Compliance Demonstration requirements on pages 5 and 6, respectively, of the draft permit are not clear regarding how compliance will be demonstrated for the PM and SO_2 Best Available Control Technology (BACT) emission limits for boilers B06, B07, B08, and B09. Will the facility rely upon the fuel sulfur content restriction in order to meet the BACT limits? Please clarify how the facility will demonstrate compliance with the permitted emission limits for these boilers.

4. The draft permit does not appear to require a performance test for PM and SO_2 for boilers B06, B07, B08, and B09. Please add an initial performance testing to the permit. An initial performance test would verify that the facility will be able to demonstrate compliance with the applicable BACT limits and compliance requirements currently in the permit.

5. Similar to comment #3 above, the permit record does not explain how the Compliance Demonstration requirements and monitoring scheme for all pollutants for the diesel generator (condition I.C. of the draft permit) will demonstrate compliance with the applicable BACT limits. Please explain in the permit record how the facility will demonstrate compliance with the applicable BACT limits in the permit for the diesel generator.

6. Similar to the above comments #3 and #5, the permit record does not explain how the Compliance Demonstration requirements and monitoring scheme for all pollutants for the boiler B05 (condition I.F. of the draft permit) will demonstrate compliance with the applicable BACT limits. Please explain in the permit record how the facility will demonstrate compliance with the applicable BACT limits for boiler B05 in the permit

7. Page 11 of the draft permit's Preliminary Determination document states that BACT will be addressed for boilers B08 and B09 for PM, NOx, SO_2, and CO. However, according to the rest of the permit record, including on page 14 of the Preliminary Determination, the two boilers have actually not triggered PSD for SO_2. Please correct this discrepancy.

8. The draft permit does not include a numerical GHG BACT emission limit. Instead, the draft permit has an efficiency limit to maintain a 70% conversion of heat input to useful steam energy in any month on a 12-month rolling average. The definition of BACT in 40 CFR §52.21(b)(12) allows establishing a design standard in lieu of an emission limitation as BACT, but only if "technological or economic limitations on the application of measurement methodology to a particular emissions unit would make the imposition of an emissions standard infeasible" and where the record "set[s] forth the emissions reduction achievable by the implementation of such design" and shows that the selected design would "achieve equivalent results." Please add a numerical BACT emission limit(s) for GHGs – on a Carbon Dioxide equivalent (CO_2e) or individual GHG basis – that accounts for all GHGs emitted at the facility (e.g., pounds of CO_2e emitted per pound of steam produced, on a 12-month rolling average or 365-day rolling average), or explain in the permit record why a numerical limit is technologically or economically infeasible and how the design standard would achieve equivalent results. Also, please add appropriate monitoring, recordkeeping and

reporting for the GHG BACT emission limit. The permittee can monitor GHG emissions via direct measurement, or they can either apply established fuel factors (e.g., from Tables C-1 and C-2 of EPA's GHG Mandatory Reporting Rule at 40 CFR 98) or develop and use site-specific fuel factors to calculate the amount of GHG emitted from the facility.

9. Page 15 of the draft permit's Preliminary Determination document states that carbon capture and sequestration (CCS) as a technology for reducing GHG emissions is not technically feasible at this time for facilities with low CO_2 exhaust streams (estimated CO_2 is 8-12% in exhaust stream). EPA notes that post-combustion carbon capture has been demonstrated on gas turbine exhaust with a similarly low CO_2 concentration in the exhaust stream at Florida Power and Light's natural gas power plant in Bellingham, MA.[1] EPA's views on the feasibility of CCS are discussed in both our GHG permitting guidance (http://www.epa.gov/nsr/ghgdocs/ghgpermittingguidance.pdf) and our GHG control technology white paper for boilers (http://www.epa.gov/nsr/ghgdocs/iciboilers.pdf).

We appreciate the opportunity to provide comments on this draft PSD permit. Please feel free to contact me or have your staff contact Richard Angelbeck, of my staff, at (312) 886-9698.

Sincerely,

Charmagne Ackerman for
Genevieve Damico
Chief
Air Permits Section

[1] Johnson, Dennis W., Reddy, Satish, and Brown, James H. (2009). Commercialy Available CO2 Capture Technology. *Power.* Retrieved on December 1, 2011 from: http://www.powermag.com/coal/Commercially-Available-CO2-Capture-Technology_2064_p3.html

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